

ABSTRACT OF THE DISCLOSURE

A perpendicular magnetic recording suitable for mass production and having suppressed spike noise has at least a seed layer, an orientation controlling layer, an antiferromagnetic layer, a soft magnetic layer, a magnetic recording layer, a protective layer, and a liquid lubricant layer formed on a nonmagnetic substrate. The orientation controlling layer is composed of a material comprising at least Ni and Fe, and having at least one element selected from the group consisting of B, Nb, and Si. The seed layer is composed of Ta. Further, after depositing the antiferromagnetic layer and the soft magnetic layer, but before depositing the magnetic recording layer, the substrate is heated to a blocking temperature or higher, and thereafter cooled to the blocking temperature or below while applying a static magnetic field in a radial direction of the substrate.